

1. A method for providing representation of high quality, substantially usually error-free color in images, comprising the steps of:

mapping color to color data values in an expanded space, wherein said expanded color space includes an alpha channel for defining the translucency of the color between a range
5 of super-transparent and super-opaque; and

labeling an image determined by mapped color values as an expanded color space image.

2. The method according to claim 1, wherein the alpha channel extends less than 0 and beyond 1.0 when normalized to 1.0.

10 3. The method according to claim 2, wherein said alpha channel value ranges between -4 and 4.

4. A method for representing at least one of super transparent and super opaque colors using an alpha channel, comprising the steps of:

15 representing color data values or perceptually visible super transparent/super opaque data values in a colorspace; and

labeling an image determined by the perceptually visible super transparent/super opaque data values as a super transparent/super opaque colorspace image.

5. The method according to claim 4, wherein the alpha channel extends less than 0 and beyond 1.0 when normalized to 1.0.

20 6. The method according to claim 5, wherein said alpha channel value ranges between -4 and 4.

7. A computer-readable medium having computer-executable instructions for performing steps:

mapping color to color data values in an expanded space, wherein said expanded color space includes an alpha channel for defining the translucency of the color between a range of super-transparent and super-opaque; and

5 labeling an image determined by mapped color values as an expanded color space image.

8. The computer-readable medium according to claim 7, wherein the alpha channel extends less than 0 and beyond 1.0 when normalized to 1.0.

9. The computer-readable medium according to claim 8, wherein said alpha channel value ranges between -4 and 4.

10 10. A data structure for storing image information for each component of the image, comprising:

a sign field for defining whether an integer is positive or negative;

an integer field for defining said integer, wherein said integer defines a super or under saturated value for the components;

15 a decimal field for defining fine detail information of the color components.

11. The data structure according to claim 10, wherein the integer field comprises one bit for defining 2 integer values.

12. The data structure according to claim 11, wherein said two integer values are 0 and 1.

20 13. The data structure according to claim 10, wherein the integer field comprise two bits for defining four integer values.

14. The data structure according to claim 10, wherein the data structure is used to store images which are 32 bit XsRGB formatted.

15. The data structure according to claim 10, wherein the data structure is used to store images which are 36 bit XsRGB formatted.

16. The data structure according to claim 10, wherein the data structure is used to store images which are 40 bit XsRGB formatted.

5 17. The data structure according to claim 10, wherein said decimal field comprises 9 bits and said fine detailed information has 512 levels.

18. The data structure according to claim 10, wherein said decimal field comprises 10 bits and said fine detailed information has 1024 levels.

10 19. The data structure according to claim 10, wherein said decimal field comprises 11 bits and said fine detailed information has 2048 levels.

20. A data structure for storing image information for each component of an image, comprising:

a sign field for defining whether an integer is negative or positive;

15 an integer field for defining said integer, wherein said integer defines a super or under saturated value for the color and alpha components;

a decimal field for defining fine detailed information of the color and alpha components.

21. The data structure according to claim 20, wherein the integer field comprises one bit for defining 2 integer values.

20 22. The data structure according to claim 21, wherein said two integer values are 0 and 1.

23. The data structure according to claim 20, wherein the integer field comprise two bits for defining four integer values.

24. The data structure according to claim 20, wherein the data structure is used to store images which are 40 bit XsARGB formatted.

25. The data structure according to claim 20, wherein the data structure is used to store images which are 48 bit XsARGB formatted.

5 26. The data structure according to claim 20, wherein said decimal field comprises 9 bits and said fine detailed information has 512 levels.

27. The data structure according to claim 20, wherein said decimal field comprises 10 bits and said fine detailed information has 1024 levels.